The Groundplane

SBARA—The South Bay Amateur Radio Association

KU6S Newsletter

February, 2013
Volume 14, Issue 2

ARRL Member Club Since 1974

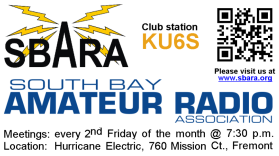
January General Meeting Highlights

Albert KJ6CHW and Bernhard AE6YN gave a summary of the ARRL Pacific Division Meeting. For a few weeks Don N6DA was in Hawaii, on the radio of course. Al WT6K and Bernhard AE6YN worked him on 80 meters with great propagation. And congratulations to our newest General, John Lord KJ6YYC.

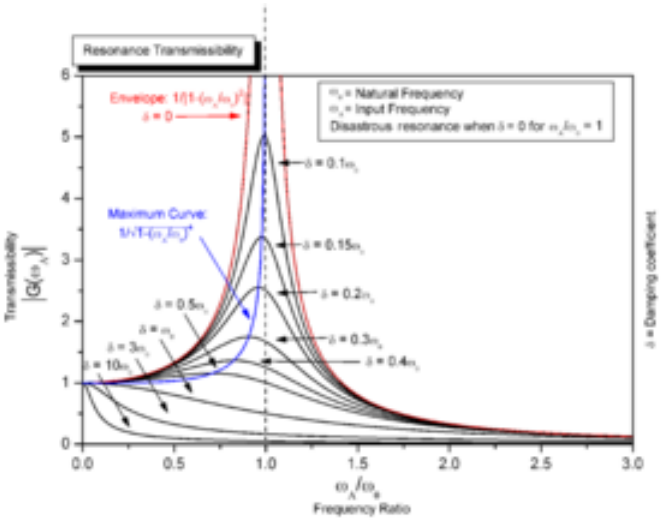
For our presentation Steve Olson KI6MYE returned to give us a summary of the YDXA expedition. Last spring Steve Olson KI6MYE and his daughter, Kjerstie KI6VNG gave a presentation of the Youth DX Adventure (YDXA), a program to take a select group of teenage hams with an adult relative to a world class station in Costa Rica (TI5KD) and let them be on the receiving end of the pile-ups. A group of twelve ran TI5KD this past July and this month Steve returned to tell us how well the kids did. If you missed the talk set Steve's write-up in this newsletter.

Raffle

W6GEM Scarf Debra AG6HJ
DBJ-2 j-pole Steve KG6HJU
ARRL Antenna Handbook Elaine KJ6ADC
MFJ 30 amp power supply Heidi KI6VNF



Resonance.....Increase of amplitude as damping creases and frequency approaches resonant frequency of a driven damped simple harmonic oscillator.



Inside this Issue

Special Points of Interest

Primavera

How Do You Choose an Antenna Analyzer?
By Dan Romanchik, KB6NU

A reader recently e-mailed me:
"In the past you told me you started with the Autek RF-1, and later moved to the Palstar ZM -30. I am finally
getting around to thinking about purchasing an antenna analyzer, but I am stumped by the choices. In order of
increasing purchase price this is what I've turned up:
* Autek RF-1 - $139.95
* Autek RF-5 - $229.95
* Rig Expert AA-54 – $340.00
* Palstar ZM-30 $399.99
* W4RT Electronics MiniVNA $399.99
* Rig Expert AA-230PRO $690.00
* Timewave Technology TZ-900S $899.99
"How does one decide? Where does one go to find out the differences? Other than asking a fellow ham, how does one find out which one is the best antenna analyzer without paying an arm and a leg (unless the feature(s) so purchased are deemed worth the cost)?
"Thanks! 73"

When I replied, I noted that he had actually missed several other good choices:
* Autek VA1 – $199.
* MFJ 259B - $240.
* YouKits FG-01 – $250.
* Comet CAA500 – $450.
The Autek VA1 is actually the antenna analyzer that I first purchased. The MFJ 259B is arguably the most popular antenna analyzer on the market. MFJ has several other models with different
feature sets. The YouKits FG-01 is a very cute, little analyzer with a small graphical display. It is made in China and sold in the U.S. by TenTec. So, how do you choose just one from this list? Well, I think the first thing that you have to ask yourself is how you're going to use the analyzer. If all you're going to do is to check the SWR of your HF dipoles, then buy the Autek RF-1. It's the least expensive unit, is reasonably accurate, and is small and lightweight, making it easy to use outside where your antennas are located. If you want to do some more serious frequency analysis, then you should be looking at the W4RT miniVNA or, if you have more cash, the Timewave TZ- 900s. These instruments can help you do a lot more in-depth analysis of your antenna system. The software for the miniVNA, for example, will easily plot the SWR of a multi-band vertical antenna from 3 – 33 MHz. Some antenna analyzers do more than just SWR. For example, what sold me first on the Autek VA1 and then on the Palstar was that they also measured reactance. So, you can use the antenna analyzer as an LC meter as well. Palstar also says that you can use the ZM-3 as a low-level signal source. While I have used my Palstar to measure inductance and capacitance, I have yet to use it as a signal source. Next, you need to consider What bands you'll be using it on. Many antenna analyzers only cover the HF bands. That's a bummer if you like operating 6m, or like to experiment with VHF/UHF antennas.
A friend of mine bought the Palstar antenna analyzer after talking to the c ompany at Dayton. At the time, they said that they were planning to come out with a model that covered 6m, as well as the HF bands. Unfortunately, they never did come out with a 6m version, and he was sorely disappointed. He ended up buying a miniVNA instead. The miniVNA can be used up to 170 MHz right out of the box, and up to 1.5 GHz with an optional extender.

Asking your fellow hams about the antenna analyzers they have is actually a good way to Figure out what's best for you. If you ask nicely, they might even let you borrow their analyzers or come over and show you how it works on your antennas.
Reading the reviews on eHam is also a good way to gather information before making a purchase like this. You certainly have to take the reviews there with a grain of salt, but if several reviewers mention a particularly good or particularly bad feature of a product, then it's certainly something worth taking a hard look at.

If you're new to the hobby, starting out small and working your way up might be a good strategy. You could buy one of the less expensive models and get used to how they work, then sell it and make the leap to a more sophisticated
unit. The way things are going, you should be able to sell your first antenna analyzer for at east 80% of what you paid for it. The March 2012 QST contains an in-depth review of four analyzers (available online to lARRL members), including the Comet CAA-500, MFJ-266, RigExpert AA-54, and the Youkits FG-01. Each analyzer reviewed had various plusses and minuses. Even if the unit you are considering was not reviewed, the article
provides a guide to the kinds of questions you should be asking as you go through the selection process.

When he's not analyzing antennas, Dan, KB6NU blogs about amateur radio at KB6NU.Com, writes and publishes the "No- Nonsense" series of amateur radio license study guides, and just has fun with amateur radio.
You can reach him by e-mail at

cwgeek@kb6nu.com, @kb6nu on Twitter, or on 40m CW many evenings.

Fremont "T" Hunt

Transmitter hunting (also known as **T-hunting**, **fox hunting**, **bunny hunting**, and **bunny chasing**), is an activity wherein participants use radio direction finding techniques to locate one or more radio transmitters hidden within a designated search area. This activity is most popular among amateur radio enthusiasts, and one organized sport variation is known as amateur radio direction finding.organized sport variation is known as amateur radio direction finding.

Subject …..Resonance

Q. What does it take to tune and create an RF signal?

We can find the answer in the formula for a resonant frequency:

$$\text{Fo (frequency of operation, KHz)} = \frac{10^6}{2\pi\sqrt{LC}} \qquad (10^6 = 1{,}000{,}000)$$

π = 3.14159 L = inductance, uHy C = capacitance, pF

$$\text{Simplified, the formula is } Fo = \frac{10^6}{6.283\sqrt{LC}}$$ (it will get simpler, stay tuned in)

As you can see, the only two components necessary are a coil (L) and capacitor (C).

This formula however does not in itself create a signal. Rather, it defines the components necessary for a certain frequency of operation. Let's do an example, then talk a bit about the bare minimums of a simple RF transmitter,….of sorts.

If we want to build a resonant circuit (let's call it a Tank circuit), we first have to decide on a frequency. Or, we could have a few components on-hand, and desire to find their frequency. Maybe you have a coil, and need to find a capacitor which will cause a resonance at a certain frequency.

It's not all that hard to do; endure to the end if you can. We will break the formula down into 2 other parts. What we will do is derive a separate formula for finding L or C, if you already have a frequency in mind. Stay Tuned…..

SBARA to Support 2013 Primavera Bicycle Event

SBARA has been asked to provide radio support for the Primavera bicycle Ride on Sunday April 21, 2013. The bike ride starts and ends at Mission San Jose High School in Fremont, travels south to Ed Levin Park, East/North up Calaveras Rd to Sunol, East through southern Pleasanton and Livermore to the top of the Altamont Pass then west back through
central Livermore and Pleasanton, over the Dublin grade next to 580, south down Palomares Rd. to Niles Canyon and back to Logan High School.

There are options for rides of 25,40,60 and 100 miles. We need to cover 5 aid stations, plus net control and as many SAG vehicles as possible, up to 17. The most important SAG areas to cover with Ham Radio are Calaveras Rd and Palomares Canyon as cell phones do not work there. For additional information see: http://www.ffbc.org/primavera/

An HT with any outside the car antenna will work for SAG.
An HT with a rubber ducky and 11 hours of battery will suffice at all the aid stations. We will be using the 147.045+ repeater on Sunol ridge. Except in the area of Ed Levin where we will use W6MLP 145.43-

Morning only or afternoon only shifts are available. Contact Tony Flusche at: ab6br@arrl.net or you may call him at: 510-247-3220.

YDXA Presentation by, Steve Olson KI6MYE

We became aware of YDXA through an announcement on a local amateur radio email distribution list. Kjerstie thought it would be a great opportunity to meet other youth in amateur radio and to have a fun trip. Kjerstie applied but did not have a lot of previous HF experience so she didn't think she would be selected. Her HF experience as limited to the School Club Roundup, but she had ARES experience and was quite active in her high school amateur radio club. School club roundup was her introduction to HF. A couple of Northern California Contest Club (NCCC) operators came to the school and worked with the students. The students mainly spent their time calling "CQ CQ CQ". They did work a couple of stations in Canada and one in Japan. They were pretty excited and actually ended up placing 8th for high schools.

When Kjerstie was selected for the adventure, she and I were not sure what to expect. I had only read about DX Expeditions in QST and had only 3 HF contacts (Hawaii, Idaho, and Florida) at the time. In the end, the adventure really exceeded all our expectations in so many ways.

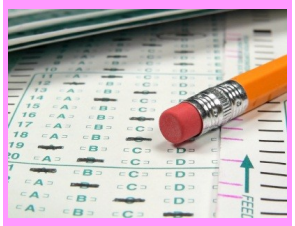
Like all expeditions, it requires money. Kjerstie went to the local clubs, made her presentation, and sold raffle tickets and t-shirts. Every little bit helps. When the time came, we woke up early at 4:30 AM and flew from SFO to ATL where we met the rest of the group. We flew to Costa Rica, met Keko, and set up the radios. After a day in San Jose to buy some souvenirs and see the downtown, we returned to make some contacts. Kjerstie was somewhat hesitant and there were some youth who were definitely anxious to get started. Rob Gibbs, one of the two leaders, worked with Kjerstie to get her started. She started slow, but with Rob's help, she soon caught fire. They worked extremely well together and in the end she had over 765 contacts, worked 48 states, and 56 countries. Most importantly, she had an incredible experience that motivated her to continue on in college where she is currently secretary of the BYU Amateur Radio Club.

We had a hard time explaining the trip to people. They couldn't believe that we had not visited the black sand beaches, the volcano, or the rain forest. We did not go zip lining or save any turtles. In fact, they were amazed that we had spent the majority of our time in the shack!

As with all adventures, the stories grow bigger with the telling and there was no shortage of tales. After two full days of saying, "you are 5[9, 8, 7] into Costa Rica", Kjerstie turned to me after the pilot made his announcement and said, "You are 59+ into the cabin". Or the fact that we were there during the Islands On The Air (IOTA) contest and more than one contact asked us for our IOTA designator. We explained that Costa Rica is not an island, but that we could give them a sequence number. After you have been on the radio long enough, even the rain on the roof sounds like static.

All in all, it was an absolutely incredible experience and I would encourage you to support YDXA by letting others know about it, contributing to it through the purchase of a raffle ticket or t-shirt, and by talking to the expedition the next time they are on the air.

Get Involved with SBARA…



…come to a monthly meeting

Our regular meetings take place the second Friday of at 7pm our meeting social begins with the monthly meeting starting at 7:30pm. Everyone is welcome to attend, regardless of whether you are a mem-

Exam sessions are conducted by SBARA VE volunteers working under the direction of the FCC. There is a charge for taking the exam. The exam fee is set by the Volunteer Exam Coordinator. SBARA's Fee is $15.00

SBARA VE Testing Schedule

Exams will be administered at Hurricane Electric, 48233 Warm Springs Blvd., Fremont. Contact: Greg Miller, wy6p at arrl dot net for info. $15 fee, bring a photo ID. Walk-ins allowed.

Tri-City VE Session Dates 2013

Sat Jan 12, 2013, 9:00 am – 11:30 am
Tue Feb 12, 2013, 6:30 pm – 9:00 pm
Sat Mar 9, 2013, 9:00 am – 11:30 am
Tue Apr 9, 2013, 6:30 pm – 9:00 pm
Sat May 11, 2013, 9:00 am – 11:30 am
Tue Jun 11, 2013, 6:30 pm – 9:00 pm
Sat Jul 13, 2013, 9:00 am – 11:30 am
Tue Aug 13, 2013, 6:30 pm – 9:00 pm
Sat Sep 14, 2013, 9:00 am – 11:30 am
Tue Oct 8, 2013, 6:30 pm – 9:00 pm
Sat Nov 9, 2013, 9:00 am – 11:30 am
Tue Dec 10, 2013, 6:30 pm – 9:00 pm

Are you looking for your favorite Repeater? Here is information you can use!

WA6PWW— 147.015 + 600Khz, PL 103.5

WA6PWW—223.900—500Khz, PL 107.2

WA6PWW—442.600 +5Mhz, PL107.2

K6AIR—146.940—600Khz, PL 123.0

K6AIR—441.525 +5Mhz, PL 123.0

ARES Net Meeting—Tuesday Evenings @ 7:30pm on 147.015+600Khz, PL 103.5

SBARA Weekly Nets—Voice and CW Action!!

Monday SBARA Net The SBARA net is taking place…. Every Monday night at 7:30 pm on the WA6PWW (currently N6IMS)	repeater, 147.015 MHz, positive offset, PL (if enabled) 103.5 Hz. Topics are club related things, projects you're working on and so on. It's a chat net.	**We need net control operators.** If you'd like to be net control, let us know during the next net. –... ...-- Bernhard AE6YN
The Slow CW Net is Taking Place…. Every Thursday and Sunday night at 7:30 pm, Thursday on 144.230 MHz Sunday on 7.057MHz +/- 3 kHz	You need an "allmode" (i.e. not just an FM) radio in order to follow. The net has now its own e-mail address. Please contact us here:	"SF Bay CW Enthusiasts" <sf-bay-cw-enthusiasts at google-groups.com> –... ...-- Bernhard AE6YN

SBARA Local Nets…

Our take place the second Monday at 7:30 pm. We also have a CW Net on Sundays at 7:30 pm on 2 meters. Everyone is welcome to sign in to one or both of these fun Nets, regardless of whether you are a member or not.

Local nets are those which cover small areas such as a community, city, county or metropolitan area, not a complete ARRL section SBARA oper-

Upcoming SBARA Events

SBARA - Groundplane

The Groundplane is published monthly by the South Bay Amateur Radio Association. Articles and letters are always welcome. The normal deadline for material is the 20th day of each month for the next month's news-letter. Articles can be sent by email to hamra-dio at Comcast dot net or via U.S. Mail. Contact the Editor for details and submission guidelines.

February 8th, 2013 at 7:30pm
Hurricane Electric, Fremont

Amateur License Exams
ARRL VEC– February 16th @ 9:00 am
at Hurricane Electric – 48233 Warm Springs Blvd. Fremont.

Contact: Bernhard, ae6yn at arrl dot net for info. $15 fee.

South Bay Amateur Radio Association — SBARA
The Ground Plane — KU6S
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